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Enantioselective Total Syntheses of (+)-Hippolachnin A, (+)-Gracilioether A, (–)-Gracilioether E, and (–)-Gracilioether F


Syntheses of Plakortin Polyketides

Significance: (+)-Hippolachnin A and the gracilioethers commonly feature a strained, bowl-shaped tricyclic core. Based on a [2+2]-photocycloaddition strategy, the authors report divergent syntheses of four different Plakortin natural products.

Comment: An organocatalytic, asymmetric 1,4-addition afforded γ-butenolide D, which served as a common intermediate. Chain elongation gave ester G, which after desaturation and [2+2] photocycloaddition, yielded (+)-hippolachnin A.